

What is Claimed is:

1 1. A power-line communication system, comprising:
2 a communication device for receiving and transmitting communication
3 signals;
4 a power supply connected between a power-line and the communication
5 device for supplying power to the communication device; and
6 coupling means with the power supply for facilitating transmission of both
7 line power and the communication signals to the communication device through the
8 power supply.

1 2. The system recited in Claim 1 wherein the coupling means facilitates
2 transmission of both line power and the communication signals along a single
3 connection.

1 3. The system recited in Claim 2 wherein the coupling means comprises a
2 high pass filter for transmitting the communication signals and rejecting power-line
3 frequencies.

1 4. The system recited in Claim 3 further comprising means providing
2 transient protection for the communication device.

1 5. The system recited in Claim 1 further comprising means for injecting the
2 communication signals onto a ground-free, low voltage direct-current
3 path.

1 6. The system recited in Claim 5 further comprising a redundant ground-free
2 low voltage direct-current path.

1 7. The system recited in Claim 1 wherein the power supply comprises a
2 transformer having a center tap to extract a low-voltage direct-current
3 component without shorting the communication signals.